MDLink®

User Manual

CARDIAC SCIENCE

MDLink User Manual

CAUTION

MDLink is intended for use by a Physician or persons licensed by State law.

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MDLink is manufactured by:

Cardiac Science, Inc.
1900 Main Street, Suite 700
Irvine, CA 92614

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Customer Service

For 24-hour service, contact Customer Service at:
(888) 466-8686 in the U.S. and Canada
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There is no charge to the customer for a Customer Service call. Please have the version number of the MDLink software program ready when contacting Customer Service.

Patents

5,792,190, 5,999,493, 5,402,884, 5,579,919, 5,749,902, 5,645,571, 6,029,085, 5,984,102, 5,919,212, 5,891,172, 5,674,266, 5,700,281, 5,891,173, 5,968,080, 6,263,239, 5,797,969, D402,758, D405,754, 5,909,138, 6,173,203, 6,088,616, 5,897,576, 5,955,956, 6,083,246, 6,064,909, 6,038,473, 5,868,794, 6,115,638, 6,366,809, 5,474,574, 6,246,907, 6,289,243, 6,411,846, 6,480,734, EP00756878. Other U.S. and foreign patents pending.

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SECTION 1

Introduction

Overview

MDLink software enables the Medical Director to modify several preprogrammed operational parameters and to define User Identifiers for Cardiac Science Automated External Defibrillators (AEDs) and associated battery packs.

The term "Cardiac Science AED" refers to FirstSave and Survivalink AED models 9100/9110/9200/9210/9300C, and Powerheart AED models 9200RD/9210RD and 9300E.

The user may choose from program options that tailor the Cardiac Science AED to meet the specific needs and requirements of the user. This manual describes how to install, start, and use MDLink.

Intended Use

MDLink is intended for use by a Physician or persons licensed by State law. In addition, the MDLink user must be familiar with using computer programs that runs in the *Microsoft*® *Windows*® environment and with the Cardiac Science AED and related accessories and documentation.

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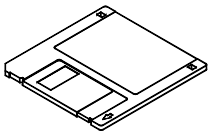
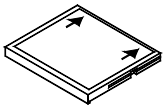
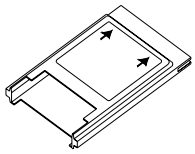
MDLink Options Kit



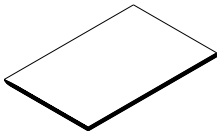
MDLink Software Program



MDLink Options Card (PCMCIA) (Optional)



PC Card Adapter



MDLink User Manual

PCMCIA is an acronym for Personal Computer Memory Card International Organization.

Quick Start Tool Kit CD-ROM with MDLink software

Selectable Options Description

The MDLink Options Kit includes the MDLink software program, the MDLink User's Manual and the MDLink Options Card (optional, for use with Model 9210/9210RD) with a PC Card Adapter (optional, for use with the MDLink Options Card). By using MDLink Software with a PC, the user may modify the Cardiac Science AED MDLink option parameters listed in the following table.

TABLE 1. MDLink Option Parameters

Selectable Option	Description	Default	Selectable Option(s)
VF/VT Rate	**Selectable for Powerheart AED 9200RD/9210RD/9300E only** Detection Rate for Ventricular Fibrillation (VF)/Ventricular Tachycardia (VT) rhythms can be set between 120 to 240 bpm. All VF/VT rhythms at or above this rate will be classified as shockable. All rhythms below this rate will be classified as non-shockable.	**160 bpm**	**120 to 240 bpm**
SVT Rate	**Selectable for Powerheart AED 9200RD/9210RD/9300E only** The user can select the SVT Rate between 160 to 300 bpm, or "No Therapy for SVT." All rhythms with rates between the VF/VT Rate and SVT Rate will be screened through a number of SVT Discrimination criteria to classify them into VF/VT or SVT. Rhythms classified as SVT between the two set rates are not classified shockable. All rhythms at or above the SVT Rate are classified shockable. If "No Therapy for SVT" is selected, the Powerheart AED will not advise defibrillation therapy if a SVT rhythm is present.	**200 for Powerheart AED 9200RD/ 9210RD** **No therapy for SVT for 9300E**	**160 to 300 bpm, or** **No Therapy for SVT**

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TABLE 1. **MDLink Option Parameters**

Selectable Option	Description	Default	Selectable Option(s)
Shock Energy Protocol	The defibrillation shock values in the 3 shock sequence may be programmed for all Cardiac Science AEDs as follows: 200VE, 300VE, 300VE (Standard High VE) 200VE, 200VE, 300VE (Standard Low VE) **For Powerheart AED, models 9200RD/9210RD and 9300E, the additional selections are available:** 150VE, 200VE, 200VE (Ultra Low VE) 150VE, 150VE, 200VE (Ultra Low VE) 200VE, 200VE, 200VE (Non-escalating VE) (Actual energy output is determined by patient impedance.)	**Standard VE - 200VE, 300VE, 300VE**	**Standard Low VE for all AEDs;** **Ultra Low, Standard or Non-escalating Low VE for Power-heart AED**
Second Shock	**FirstSave STAR Monophasic 9100/ 9110** The second defibrillation pulse (shock) value in the 3 shock sequence may be programmed to 200 or 300 Joules.	**300J**	**200J**
Daylight Savings	The automatic adjustment for Daylight Savings time can be disabled for those geographical areas not affected by the time change.	**Enabled**	**Disabled**
ECG Monitoring During CPR	**Selectable with Powerheart AED 9200RD/9210RD/9300E** When the ECG monitoring during CPR feature is enabled, it allows the Powerheart AED to monitor the patient's ECG during CPR mode.	**Enabled for 9200RD/ 9210RD** **Disabled for 9300E**	**Disabled**
Electrode Test	The electrode self-test may be disabled	**Enabled**	**Disabled**

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TABLE 1. MDLink Option Parameters

Selectable Option	Description	Default	Selectable Option(s)
Same Energy After Conversion	Cardiac Science AED delivers the same energy level as the previous defibrillation pulse when the patient assumes (or converts to) a NSR and then reverts back again to a shockable cardiac rhythm. Disabling this feature allows the Cardiac Science AED to increment the defibrillation pulse delivered to the next energy level after conversion.	**Enabled**	**Disabled**
CPR Mode	Allows the user to have No Sound during CPR, a *"Continue CPR"* prompt every 15 seconds, or a beep every 15 seconds during the rescue sequence.	**No Sound**	**Phrase or Beep**
Rescue Data Card Format ***(only available with Models 9210, 9210D & 9210RD)***	Rescue event data may be stored externally in one of the following ways: 1) ECG and event data is recorded in external memory. 2) ECG, event data and voice sound at the scene of a rescue is recorded in external memory.	**ECG and Event Data**	**ECG, Event and Voice Record-ing**
Maximum Shocks per Rescue	The number of defibrillation pulses per rescue can be set to any number between 3 and 99**.**	**99**	**3 to 99**
CPR Time (Seconds)	The user can set the CPR time to allow between 60 to 180 seconds of CPR to be performed if the analysis decision is non-shockable, or following three consecutive shockable analysis decisions.	**60 seconds**	**60 to 180 seconds**

The parameters may be stored directly to the Cardiac Science AED or to the MDLink Options Card. The MDLink Options Card may then be used to transfer the appropriate parameters to several Cardiac Science AED units, ensuring that each Cardiac Science AED unit is programmed with the identical parameters.

AED and Battery Identifiers

In addition to the operational parameters, the user may define identifiers for the Cardiac Science AED and the currently installed battery.

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AED User Information

MDLink may be used to define identification information about the AED that is stored in the internal memory of the Cardiac Science AED. The identification information is archived with each rescue attempt and is displayed by RescueLink during rescue data retrieval and display.

Battery Pack Identifier

MDLink may also be used to define a numeric identifier to be stored in the memory of the current IntelliSense battery pack. The battery identifier is archived with each rescue attempt and displayed by RescueLink during rescue data retrieval and display.

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SECTION 2

Installation

MDLink Installation

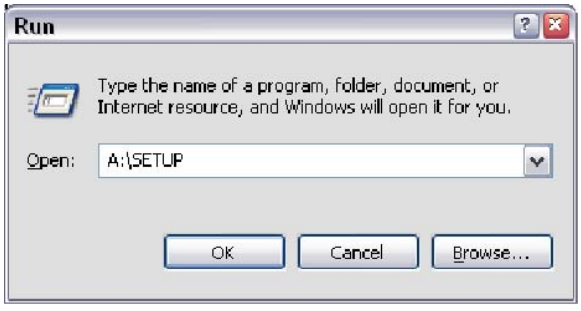
To install MDLink, perform the following steps:

- MDLink is compatible with Windows 95, 98, NT 4.0, 2000, XP:

Floppy Diskette:

To install, select the **Run** command from the **Start**

menu.
Select or type **A:\SETUP** (or the appropriate drive letter for your system floppy disk drive) and click **OK**.



or **CD-ROM:**

To install, put the QuickStart Tool Kit CD-ROM in the CD drive. The program will Autorun.

Select MDLink by double clicking.

Double click on the application to download.

Macromedia Flash Player 6
File View Control Help
POWERHEART AED G3
automated external defibrillator
About Cardiac Science
Overview
Website
Contact
About Powerheart AED G3
Training Demo
AED Manual
RescueLink® Software
MDLink® Software
Warranty Info
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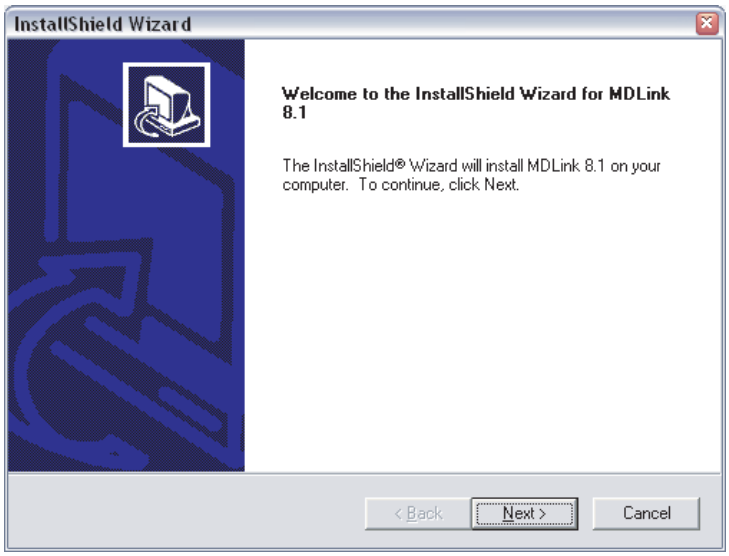
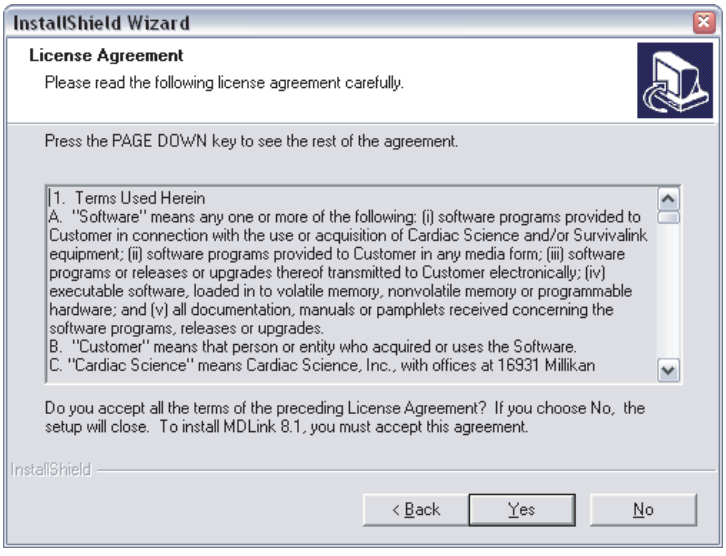
MDLink® Software
MDLink® is a software program that allows the Medical Director to modify several pre-programmed operational parameters for the Cardiac Science AED and associated battery.
Download Software -
Click "Open" when the dialog box appears.
MDLink
Download manual [1.6MB, PDF]
Note: To view the above PDF document, you need the free Adobe Acrobat Reader. If you do not have the Reader already installed you can install it from this CD by clicking on the appropriate link below:
- Acrobat Reader for Windows
CARDIAC SCIENCE

After the MDLink **Welcome** screen appears, click **Next** to initiate the installation process.


InstallShield Wizard
Welcome to the InstallShield Wizard for MDLink 8.1
The InstallShield® Wizard will install MDLink 8.1 on your computer. To continue, click Next.
< Back
Next >
Cancel

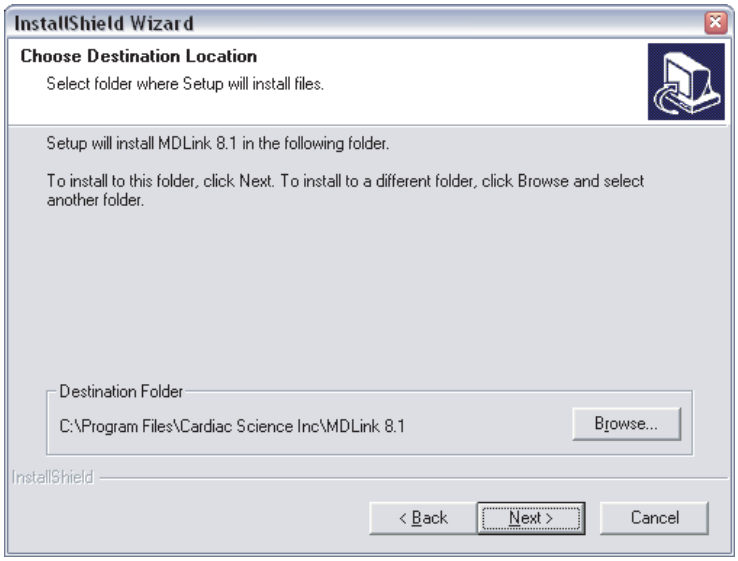
Before proceeding with the installation process, you will be asked to accept the terms and conditions of the Software License Agreement. The installation process will not proceed until the agreement is accepted.

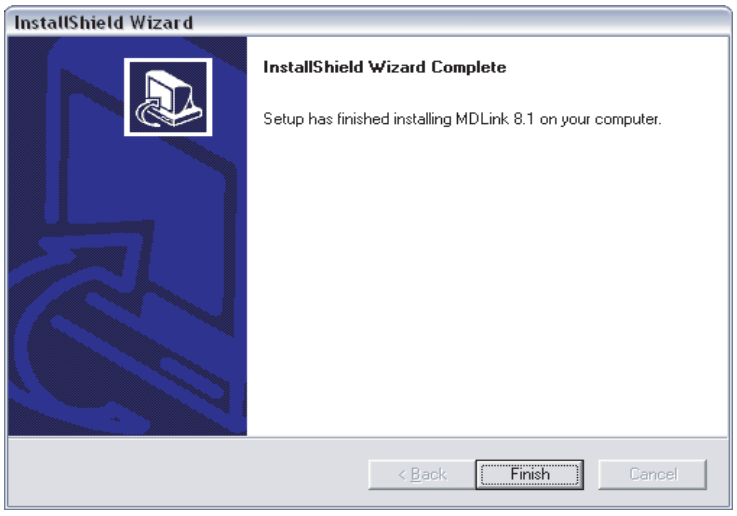

InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
1. Terms Used Herein
A. "Software" means any one or more of the following: (i) software programs provided to Customer in connection with the use or acquisition of Cardiac Science and/or Survivalink equipment; (ii) software programs provided to Customer in any media form; (iii) software programs or releases or upgrades thereof transmitted to Customer electronically; (iv) executable software, loaded in to volatile memory, nonvolatile memory or programmable hardware; and (v) all documentation, manuals or pamphlets received concerning the software programs, releases or upgrades.
B. "Customer" means that person or entity who acquired or uses the Software.
C. "Cardiac Science" means Cardiac Science, Inc., with offices at 16931 Millikan
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install MDLink 8.1, you must accept this agreement.
InstallShield
< Back
Yes
No

To select the location of the MDLink software program on the PC hard drive:

- Accept the default directory shown on the **Choose Destination Location** screen by clicking Next; or
- Click **Browse** to select a new directory name and click **Next**.

Click **Back** to return to the previous screen.
Click **Cancel** to abort the installation process.


InstallShield Wizard
Choose Destination Location
Select folder where Setup will install files.
Setup will install MDLink 8.1 in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\Cardiac Science Inc\MDLink 8.1
Browse...
InstallShield
< Back
Next >
Cancel



After successful installation, click **OK** to exit.

SECTION 3

Using MDLink

Getting Ready

Before using MDLink, decide where you want to store the selected parameters. The parameters may be stored in one of the following locations:

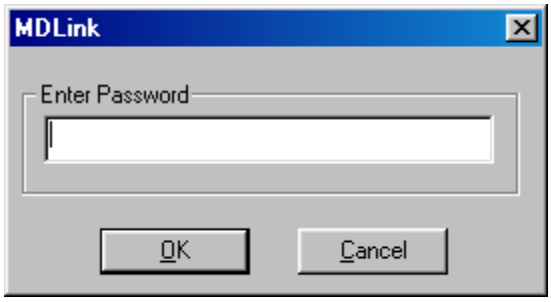
- Internal memory of the Cardiac Science AED; or
- MDLink Options Card installed in a PC card (PCMCIA) socket of the PC (optional with 9110 and 9210 models).

Starting MDLink

To start MDLink:

- Double-click the MDLink icon from the program group; or
- Double-click the **MDLink.exe** file by using Windows Explorer (Windows 95/98/NT 4.0/2000/XP). The file can be found in the installation directory specified during the installation process.

A password is required to use the MDLink software program. The software requires you to use the preset password, or one you choose, each time MDLink is run. Type the preset password *RESCUE* and click **OK**.



The password may be changed to limit access to the MDLink software. Change the preset password on the MDLink main screen by using the* Password *command button as described in the Command Buttons section of this chapter.

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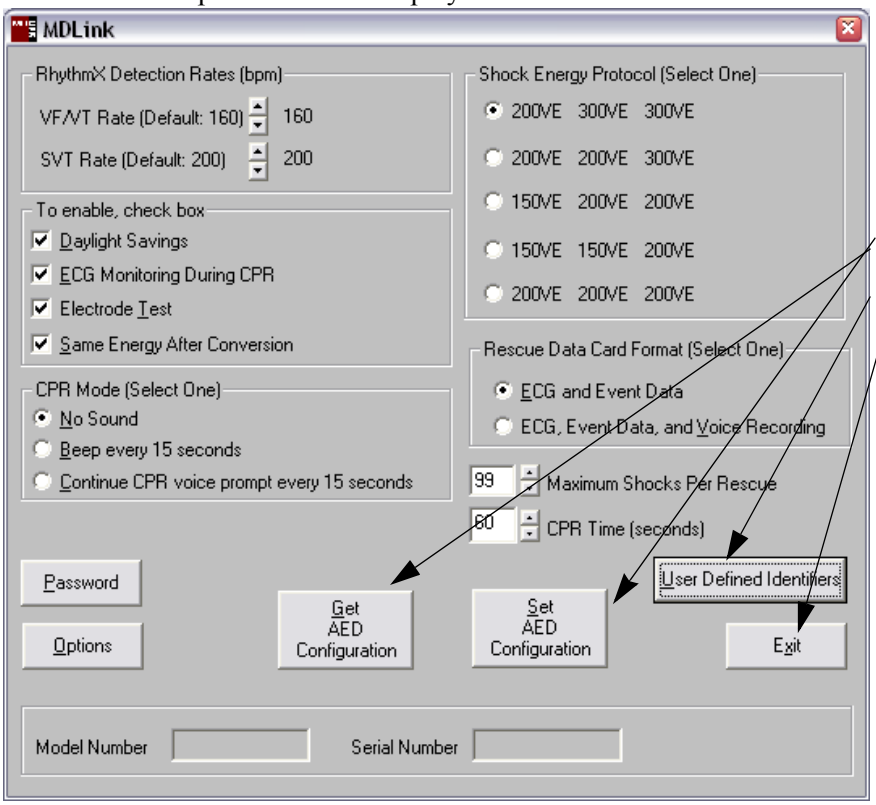
After entering the password, the **MDLink** screen appears and all parameters are displayed.



Connect the AED to the Computer

The Cardiac Science AED must be connected to the PC via the Cardiac Science AED serial communication cable (and optional USB serial adapter cable if needed).

The Cardiac Science AED serial communication cable and optional USB serial adapter cable can be purchased from Cardiac Science.

Connect one end of the serial communication cable (the RJ-11 end of the cable) to the Cardiac Science AED serial connector. The Cardiac Science AED serial connector is located under the AED lid behind the blue rubber

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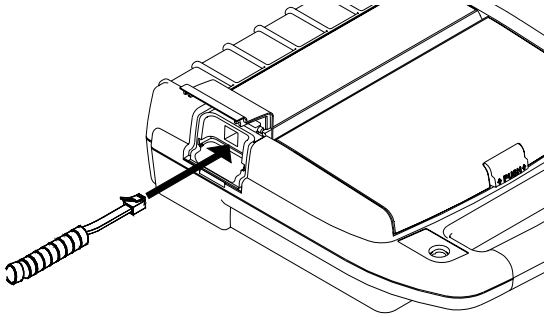
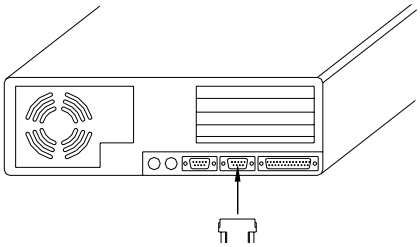
data access door on the 9300E and under the data access door for other models as shown in the illustration below.



Connect the other end of the serial communication cable (or the USB serial adapter cable) to the appropriate Com Port on the back of the PC.

The connector on the serial communication cable has a 9-pin connector. If the Com Port uses a 25-pin connector, attach a 9-pin adapter to the serial communication cable before connecting it to the PC.

Opening the lid of the Cardiac Science AED allows communication to the PC through the cable.



Storing Parameters

To store the parameters in the internal memory of the Cardiac Science AED, connect the Cardiac Science AED to the PC using the serial communication cable (the USB serial adapter cable can be pluggedinto the serial communication cable, and connected to the PC via the USB port) as stated above.

To store the parameters to an MDLink Options Card, install the MDLink Options Card into PC Card Adapter, and then into the card socket of the PC; or insert the MDLink options card into your CompactFlash desktop reader.

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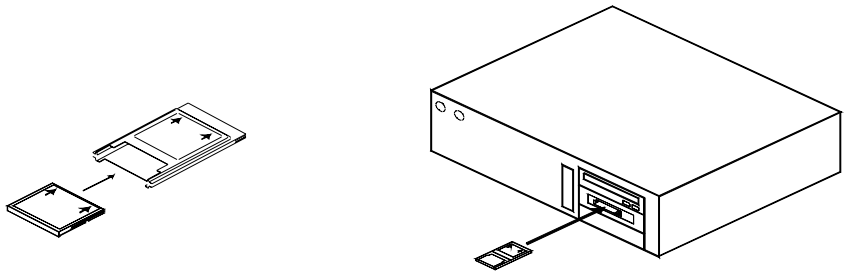
Connect the AED to the PC using the serial communication cable (and optional USB serial adapter cable if needed).



The MDLink Options Card is shown inserted into the PC Card Adapter.

The MDLink Options Card may only be inserted into the PC Card Adapter one way. The card label and the adapter label must both be facing up.

If your PC is not equipped with a CompactFlash port, a PC Card Adapter must be used when inserting the MDLink Options Card into the PC.

The Cardiac Science AED lid must be opened to transfer the parameters to the internal memory of the Cardiac Science AED or to a MDLink Options Card in the card slot of the AED.

Command Buttons

Before selecting the parameter options for the Cardiac Science AED, it is important to understand the command buttons and their functions.

The command buttons may be selected by:

- Clicking the desired button; or
- Holding down the **Alt** key and typing the key of the underlined character in the command name.

Set AED Configuration

The **Set AED Configuration** command allows you to store the selected parameters in:

- The internal memory of the Cardiac Science AED; or

- PC card (PCMCIA) socket: Install the MDLink Options Card into PC Card Adapter, and then into the card socket of the PC, or insert the MDLink Options Card into your CompactFlash desktop reader. Connect the AED to the PC using the serial communication cable (and optional USB serial adapter if needed).

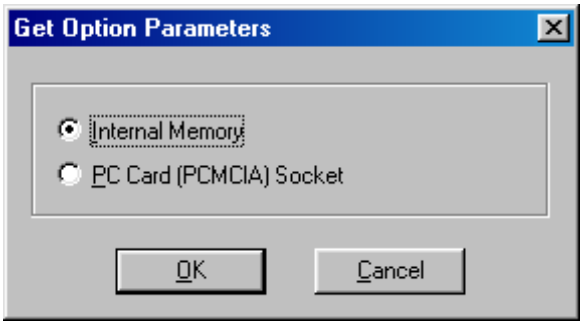
Set the desired values for all parameters and then click **Set** to store the selected parameters to the specified location.

Get AED Configuration

The **Get AED Configuration** command allows you to retrieve the parameters from the internal memory of the Cardiac Science AED or the MDLink Options Card installed in the PC card slot of the PC. The **Get Options Parameters** screen will appear when the **Get** command is selected.

Cardiac Science AED Internal Memory

When retrieving the parameter from the internal memory of the Cardiac Science AED, select **Internal Memory** and click **OK**.



The internal parameters, model number and serial number of the Cardiac Science AED will appear on the **MDLink** screen.

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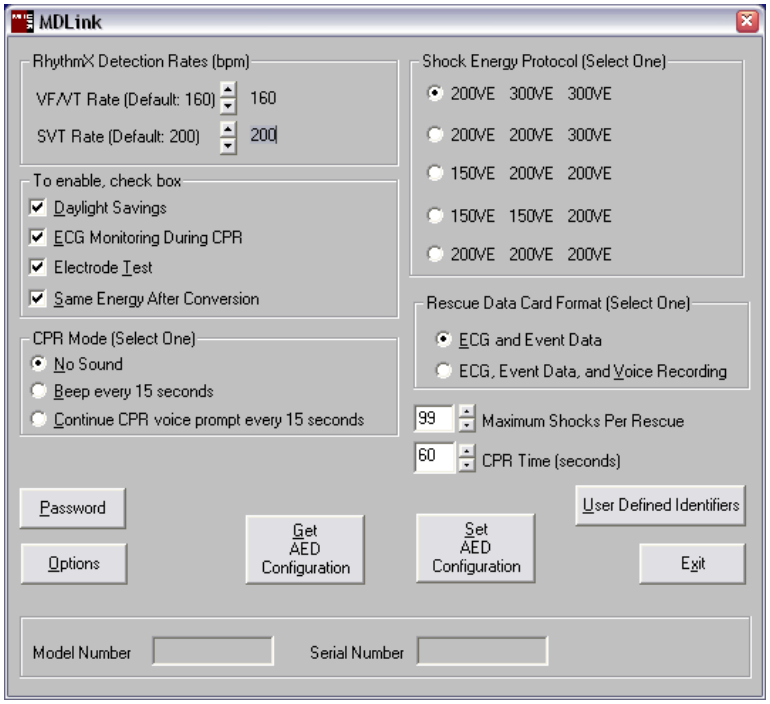
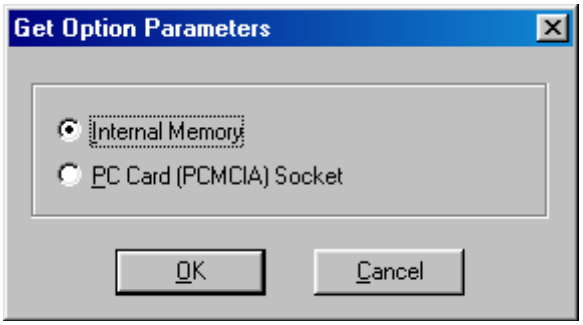
PC Card (PCMCIA) Socket



When retrieving the parameters from a MDLink Options Card, select the **PC Card (PCMCIA) Socket** on the **Get Options Parameters** screen and click **OK**.



The parameters from the MDLink Options Card will appear on the **MDLink** screen.

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Options

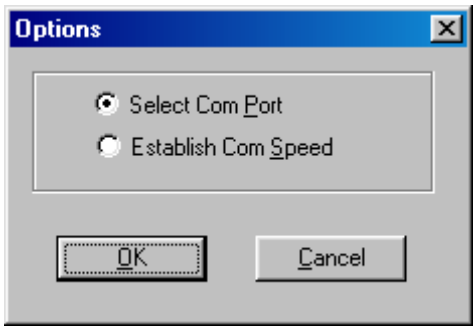
The **Options** command allows you to:

- Select the communications port; or
- Establish the communication speed.

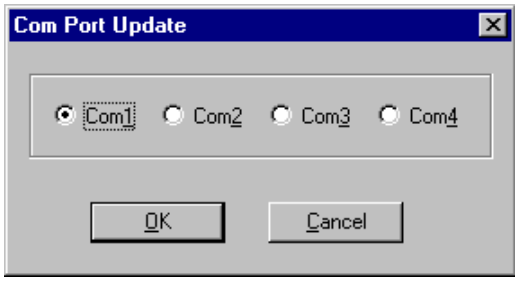
The **Options** screen will appear when the **Options** command is selected.

Select the Communications Port

Select Com Port allows you to change the Com Port selected during installation. Choose **Select Com Port** and click **OK**.



Select the communications port that the PC will be using to transfer data to or from the Cardiac Science AED. Click **OK** and MDLink returns to the **MDLink** screen.



The Com Port changes affect only the current MDLink session. The Com Port specified during installation will be used the next time MDLink is executed.

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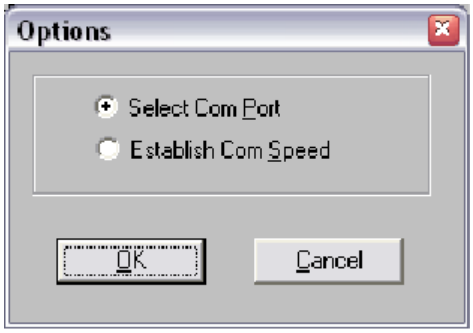
Establish Communication Speed

The Cardiac Science AED and the PC will automatically find a compatible data transfer speed the first time MDLink is used. **Establish Com Speed** may be used to verify that communications are functioning properly. *Use of this command will be rare.* Select **Establish Com Speed** and click **OK**.



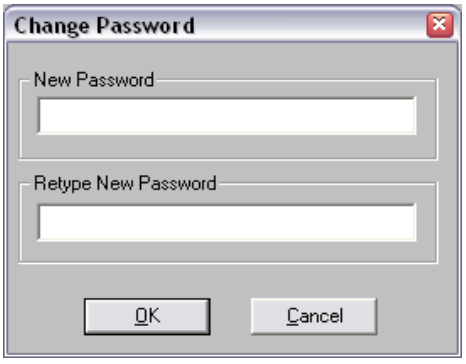
The data transferal speed between the PC and the Cardiac Science AED is established and MDLink returns to the **MDLink** screen.

Password

The **Password** command allows you to change the preset password.

Select the **Password** command button.

Type in the new password. Any keystroke is a valid password character. As you type, the characters appear as asterisks (*). To confirm the new password, re-type the new password and click **OK**.



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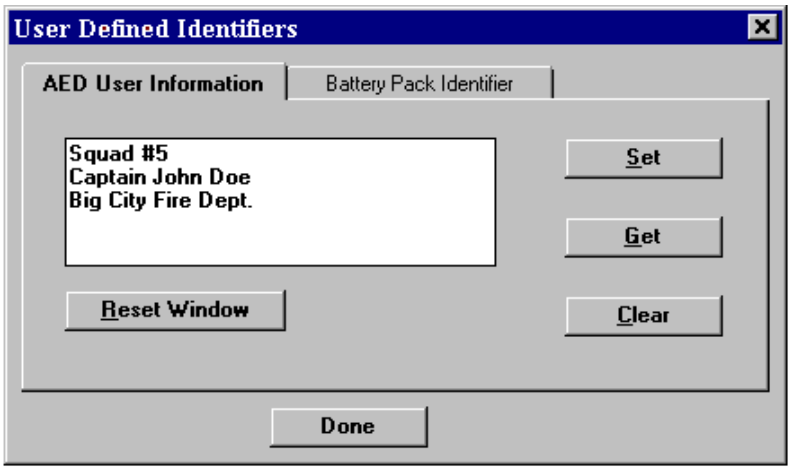
A message will display confirming that the preset password has been changed. If you did not type the password correctly the second time, you will be asked to re-enter the password.

User Defined Identifiers

The User Defined Identifiers option allows for the user to define identification information for the AED or the currently installed battery.

AED User Information

This screen allows the user to define AED identification information. You may type up to 45 characters of device identification information to be stored within the internal memory of the Cardiac Science AED. This information is archived with each rescue attempt and will be displayed with RescueLink rescue data.



To retrieve identification information from the internal memory of the Cardiac Science AED, click the **Get** button and the information will appear in the screen.

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To enter new AED identification information: type the information onto the screen and click **Set** to store the information in the internal memory of the AED.

To change the AED identification information: enter the new identification information and click **Set** to store the new information in the internal memory of the AED.

To erase AED identification information: click on **Clear** and the identification information will be erased from within the AED.

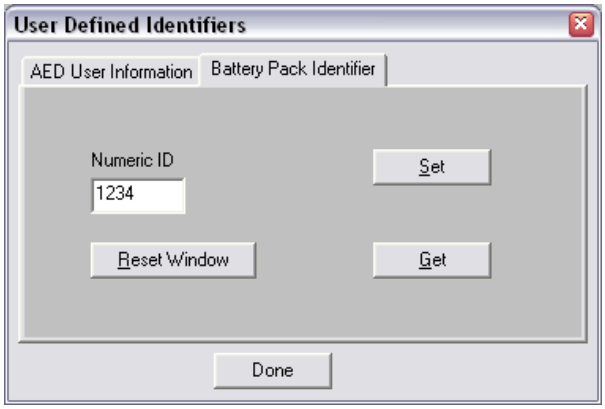
Use the Done button to return to the User defined Identifiers screen.

Use the Done Button on the User Defined Identifiers screen to return to the **MDLink** screen.

To clear the text box: click the **Reset Window** button. This does not affect the information stored in the AED.

Battery Pack Identifier

The **Battery Pack Identifier** screen allows the user to give the battery an identifier number. Any number from 1 to 65,000 may be entered and stored within the memory of the IntelliSense battery. This information is archived with each rescue attempt and will be displayed with RescueLink rescue data.



To retrieve battery identification information: click on the **Get** button and the identification number (if specified) will appear in the screen.

MDLink will prompt you if the battery has not been assigned an identification number.

To enter a new identification number: type the information onto the screen and click **Set** to store the information in the battery memory.

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If the battery already contains an identifier, MDLink will allow you to cancel the **Set** command or overwrite the current identifier.

To clear the Numeric ID text box: click **Reset Window**. This does not affect the information stored in the battery.

Use the* Done *button to return to the* MDLink *screen.

You may exit the* User Defined Identifiers *screen without saving any changes by selecting the* ✕ *in the upper right hand corner of the screen.

Exit

When you are finished using MDLink, select the **Exit** command to close the program.

Selectable Parameters

TABLE 1. **OPTION DEFAULTS**

Function	Default	Selectable Options
VF/VT Rate[1]	160 bpm	120 to 240 bpm
SVT Rate[1,2]	200 bpm for 9200RD/9210RD No Therapy for SVT for 9300E	160 to 300 bpm; or No Therapy for SVT
Shock Energy Protocol	200VE, 300VE, 300VE	Ultra Low VE[1]; Standard (Low or High) VE; Non-escalating low VE[1]
Second Shock (for FirstSave Monophasic AED 9100/9110 models)	300J	200J
Daylight Savings	Enabled	Disabled
ECG Monitoring During CPR[1,2]	Disabled	Enabled
Electrode Test	Enabled	Disabled
Same Energy After Conversion	Enabled	Disabled
CPR Mode	No Sound	No Sound; Voice Prompt; or Beep
Rescue Data Card	ECG & Event Data	ECG & Event Data; or ECG, Event Data and Voice Recording
CPR Time (seconds)	60	60 to 180
Maximum Shocks Per Rescue	99	3 to 99

1. Selectable option only available for Powerheart AED models
2. Feature setting varies for Powerheart AED G3 9300E

The settings on your AED may be set at the factory to your specifications, if requested. In this case, the AED default settings will differ from the default settings shown in the previous table.

Choose *all* the parameters and then click the **Set** command to simultaneously store all of the selected parameters.

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RHYTHMx Detection Rates

For Powerheart AED devices only, the Detection Rates for VF/VT and SVT can be programmed by the Medical Director using the MDLink software. All rhythms with rates between the VF/VT Rate and SVT Rate will be screened through SVT discriminator criteria in order to classify the patient's rhythm as VF/VT or SVT. Based on the VF/VT Rate setting, all ventricular fibrillation (VF) and ventricular tachycardia (VT) rhythms at or above the set rate will be classified as shockable. All rhythms below the set VF/VT Rate will be classified as non-shockable. The default VF/VT Rate is 160 bpm (beats per minute), with selectable rates between 120 bpm and 240 bpm.

SVT Rate is designed to reduce the risk of shocking a SVT rhythm based on rate alone, by differentiating between SVT and VT rhythms. The default SVT Rate is 200 bpm for models 9200RD/9210RD and "No Therapy for SVT" for model 9300E, with selectable rates between 160 to 300 bpm or "No Therapy for SVT." Rhythms at or above the selected SVT Rate will be classified as shockable. The SVT Rate must be set greater than or equal to the VF/VT Rate. If "No Therapy for SVT" is selected, the Powerheart AED will not advise defibrillation therapy if a SVT rhythm is present.

To change the VF/VT Rate or SVT Rate, scroll through the values using the Up Arrow to increase the value or the Down Arrow to decrease the value. Click the **Set** command to execute your selection or choose another option.

Shock Energy Protocol

The Cardiac Science AED follows guidelines recommended by the American Heart Association (AHA) and the International Liaison Committee on Resuscitation (ILCOR). Upon detecting a shockable cardiac rhythm, the AED advises the user to press the "Shock" button to deliver a series of up to 3 defibrillation pulses followed by the user performing CPR. The 3 shocks are delivered in a pre-programmed sequence of escalating

energy. Using the MDLink option, the energy protocol for the Cardiac Science AED can be programmed with one of the following protocols:

TABLE 3. Cardiac Science AED Shock Energy Protocols

Description	1st Shock	2nd Shock	3rd Shock
Ultra Low Energy A[1]	150 VE	150 VE	200 VE
Ultra Low Energy B [1]	150 VE	200 VE	300 VE
Standard (High - Default Value)	200 VE	300 VE	300 VE
Standard (Low)	200 VE	200 VE	300 VE
Non-Escalating Low Energy [1,2]	200 VE	200 VE	200 VE

1. Selectable option only available for Powerheart AED
2. Non-escalating Low Energy is the only setting for FirstSave AED G3.

Daylight Savings

The Cardiac Science AED contains an internal clock that will automatically adjust for Daylight Savings Time. The internal clock will adjust forward one hour when Daylight Savings Time becomes effective and backward on hour when Standard Time becomes effective.

To stop the AED from automatically adjusting its internal clock, click the box to the left of the **Daylight Savings** box to remove the check mark and disable.

Click the **Set** command to execute your selection or choose another option.

ECG Monitoring During CPR

The Powerheart AED is capable of monitoring the patient's ECG rhythm continuously throughout the rescue, including during Charge and CPR modes. Continuous monitoring will interrupt CPR if a shockable rhythm is detected. When CPR is interrupted, the prompt, "Do not touch patient. Analyzing rhythm" will be issued. Only one interruption will be allowed during a single CPR mode. CPR mode will not be interrupted if preceded by three consecutive shocks.

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The default setting is disabled.

To disable/enable the ECG monitoring during the CPR mode option, remove the check mark in the E**CG Monitoring During CPR** box.

Click the **Set** command to execute your selection or choose another option.

Electrode Test

As part of the daily self-test, the Cardiac Science AED will check for properly connected electrodes. Only electrodes approved by Cardiac Science are intended to be used with the Cardiac Science AEDs. Using MDLink, the electrode self-test may be disabled.

To disable the electrode self-test, click the box to the left of **Electrode Test** to remove the check mark.

Click the **Set** command to execute your selection or choose another option.

CAUTION: ***Possible Improper Device Performance***
Use of any electrodes other than those approved by Cardiac Science may cause the Cardiac Science AED to function improperly during a rescue. The use of other brands of electrodes, other than those approved by Cardiac Science, may void the Cardiac Science Limited Warranty.

Same Energy After Conversion

The Cardiac Science AED delivers the same energy level as was delivered in the previous defibrillation pulse after a patient has converted from ventricular fibrillation (VF) or ventricular tachycardia (VT) to normal sinus rhythm (NSR) and back again to VF or VT.

To allow the AED to increment the energy level of the defibrillation pulse delivered after conversion, click the box to the left of the **Same Energy After Conversion** to remove the check mark and disable. This does not apply if the previous defibrillation pulse used is the high variable energy level (300VE).

Click the **Set** command to execute your selection or choose another option.

CPR Mode

The user may select a ***"Continue CPR"*** verbal prompt or Beep tone to be repeated at fifteen second intervals while the AED is operating in CPR mode during a rescue attempt. The default setting is **No Sound**.

Click on the desired setting to enable the desired **CPR Mode** prompt. Click the **Set** command to execute your selection or choose another option.

Rescue Data Card Format

The Cardiac Science AED has two format options for external memory storage on a Rescue Data Card (models 9210 and 9210RD only).

ECG and Event Data

When the **ECG and Event Data** option is selected, the AED will record ECG and other rescue event data during a rescue attempt.

The MDLink default setting is **ECG and Event Data.** Click the **Set** command to execute your selection or choose another option.

ECG, Event Data and Voice Recording

When **ECG, Event Data and Voice Recording** is selected, the AED will record ECG, event data and ambient sound, such as voices, voice prompts, and background noise at the scene of a rescue.

To enable this option, select the **ECG, Event Data and Voice Recording** option. Click the **Set** command to execute your selection or choose another option.

Available Storage

The amount of rescue data that may be stored on a Rescue Data Card is dependent upon the number of megabytes (MB) of storage that are available on your Rescue Data Card.

Cardiac Science AED models 9210/9210RD come equipped with a Rescue Data Card slot. Rescue data can be stored on a removable Rescue Data

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Card. Upon completing the rescue, the card can be removed for data retrieval without taking the Cardiac Science AED out of use.

The Rescue Data Card stores ECG and other event data. Using MDLink and a Rescue Data Card, the Cardiac Science AED can record ECG and event data, and if desired, the ambient sound at the rescue site. The Rescue Data Card has 8 megabytes (MB) of storage memory and is capable of recording ECG and Event Data for up to 10 hours, or one rescue of up to 40 minutes with ECG, Event Data and Voice Recording.

Maximum Shocks per Rescue

The Cardiac Science AED is capable of delivering up to 99 defibrillation shocks per rescue attempt (A rescue attempt is defined as the time when the electrodes are placed on the chest of the patient until the lid is closed and the device powers down).

To change the maximum number of pulses delivered per rescue, enter the desired number in the edit box or scroll through using the Up Arrow to increase the value or the Down Arrow to decrease the value.

Click the **Set** command to execute your selection or choose another option.

CPR Time

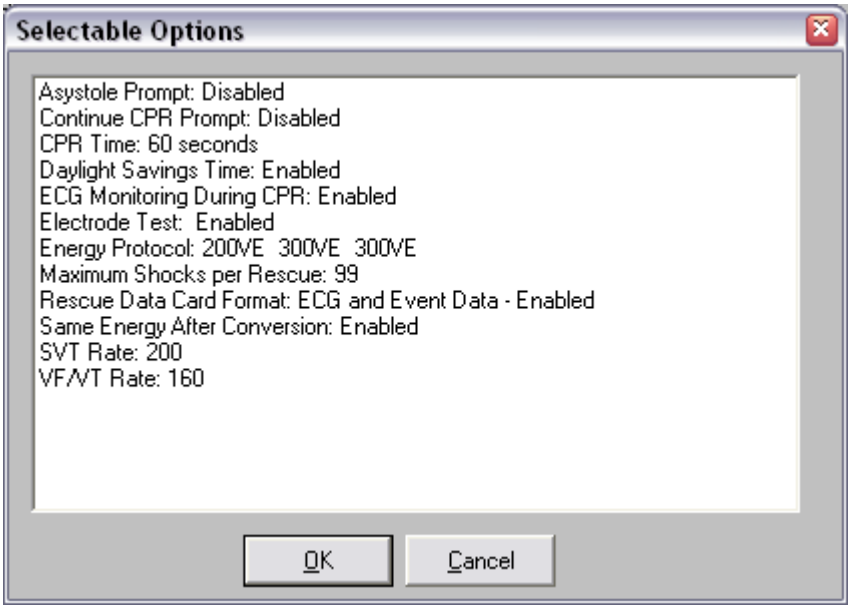
After the delivery of three consecutive defibrillation shocks, or detection of a non-shockable rhythm, the Cardiac Science AED automatically enters CPR mode. The Cardiac Science AED default CPR Time setting is 60 seconds. The CPR time setting can be set to a minimum of 60 seconds to a maximum 180 seconds, in increments of 1 second.

To change the CPR time in seconds, enter the desired number in the edit box or scroll through the settings using the Up Arrow to increase the value or the Down Arrow to decrease the value.

Click the **Set** command to execute your selection or choose another option.

Parameter Storage Location

After the parameter options have been selected, click the **Set** command button to store the selected parameters. Before the selected parameters are stored, the **Selectable Options** screen allows you to review all the parameters. If the parameters are correct, click **OK**. Click **Cancel** to return to the **MDLink** screen.



The selected parameters may then be transferred to one of two memory storage locations as discussed in detail in the next section. The memory storage locations include:

- **AED Internal Memory** - the internal memory of the Cardiac Science AED; or
- **PC Card (PCMCIA) Socket** - the MDLink Options card that is inserted into the card socket of the PC.

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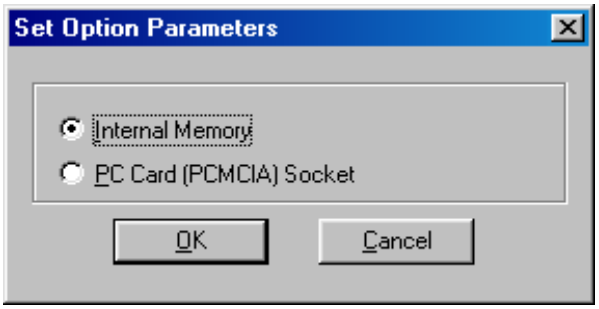
AED Internal Memory

To select the internal memory of the AED as the parameter storage location, choose **Internal Memory** and click **OK**.



After the **Internal Memory** has been successfully updated with the selected parameters, click OK to return to the **MDLink** screen.

An error message will appear if the AED is not connected to the PC with the serial communication cable or USB serial adapter cable.

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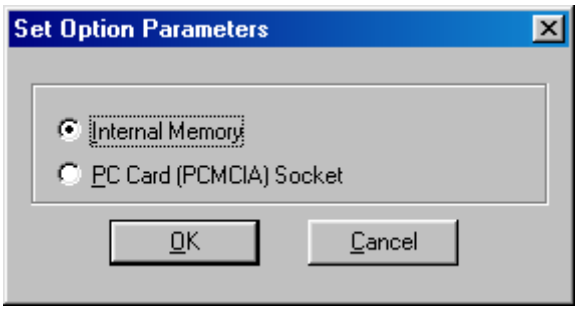
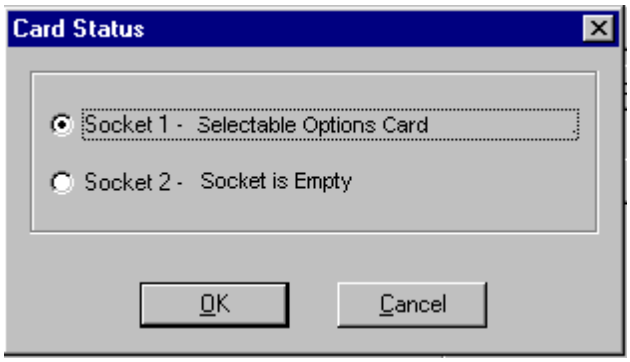
PC Card (PCMCIA) Socket

To select the MDLink Options Card (inserted in the PC card socket) as the parameter storage location, choose **PC Card (PCMCIA) Socket** and click **OK**.



When selecting the **PC Card (PCMCIA) Socket** as the parameter storage location, a **Card Status** box will allow you to choose the socket you wish to use. Insert the MDLink Options Card; select the appropriate socket and click **OK**.



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When the **PC Card (PCMCIA) Socket** has been successfully selected as the parameter storage location, click **OK**.

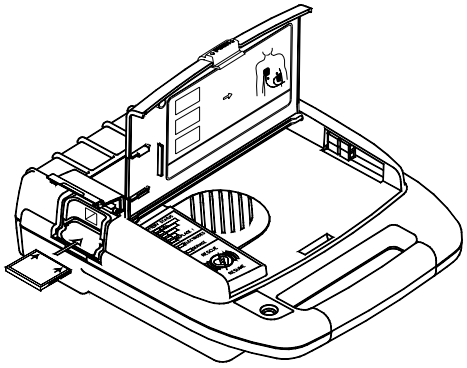
If repeated attempts to select the parameter storage location are unsuccessful, contact Cardiac Science Customer Service for assistance.

You have now finished the selection of the MDLink optional parameters. To exit MDLink, click the **Exit** command button.

Transferring the Selected Options

1. To use the MDLink Options card to transfer the selectable parameter options to the Cardiac Science AED, insert the programmed MDLink Options card into the card slot of the AED.

The MDLink Options Card may only be inserted into the Cardiac Science AED one way, with the label side up and the arrows pointing toward the AED.



2. Open the lid to turn **ON** the Cardiac Science AED.
3. When the "Battery Status" indicators begin to rapidly sequence, press the "Shock/Continue" button. The ***"Program mode"*** voice prompt is heard when the AED begins storing the selected parameters.
4. When the option parameters have been successfully transferred to the internal memory of the Cardiac Science AED, the voice prompt ***"Card full. Storing internally"*** is heard.

The Cardiac Science AED performs a test to verify that the transfer was free of errors. When an error is detected, the Cardiac Science AED emits an audible alert (chirp). If an audible alert is sounded:

> ***Open and close the lid of the Cardiac Science AED. If the chirp stops and the "Status" indicator is GREEN, then try again to transfer the parameters to the AED using the MDLink Options Card. If the chirp reoccurs, contact Cardiac Science Customer Service.***
>
> ***If the audible alert is heard and the Status indicator is RED with a BLACK X, contact Cardiac Science Customer Service.***

5. Close the lid and remove the MDLink Options Card.

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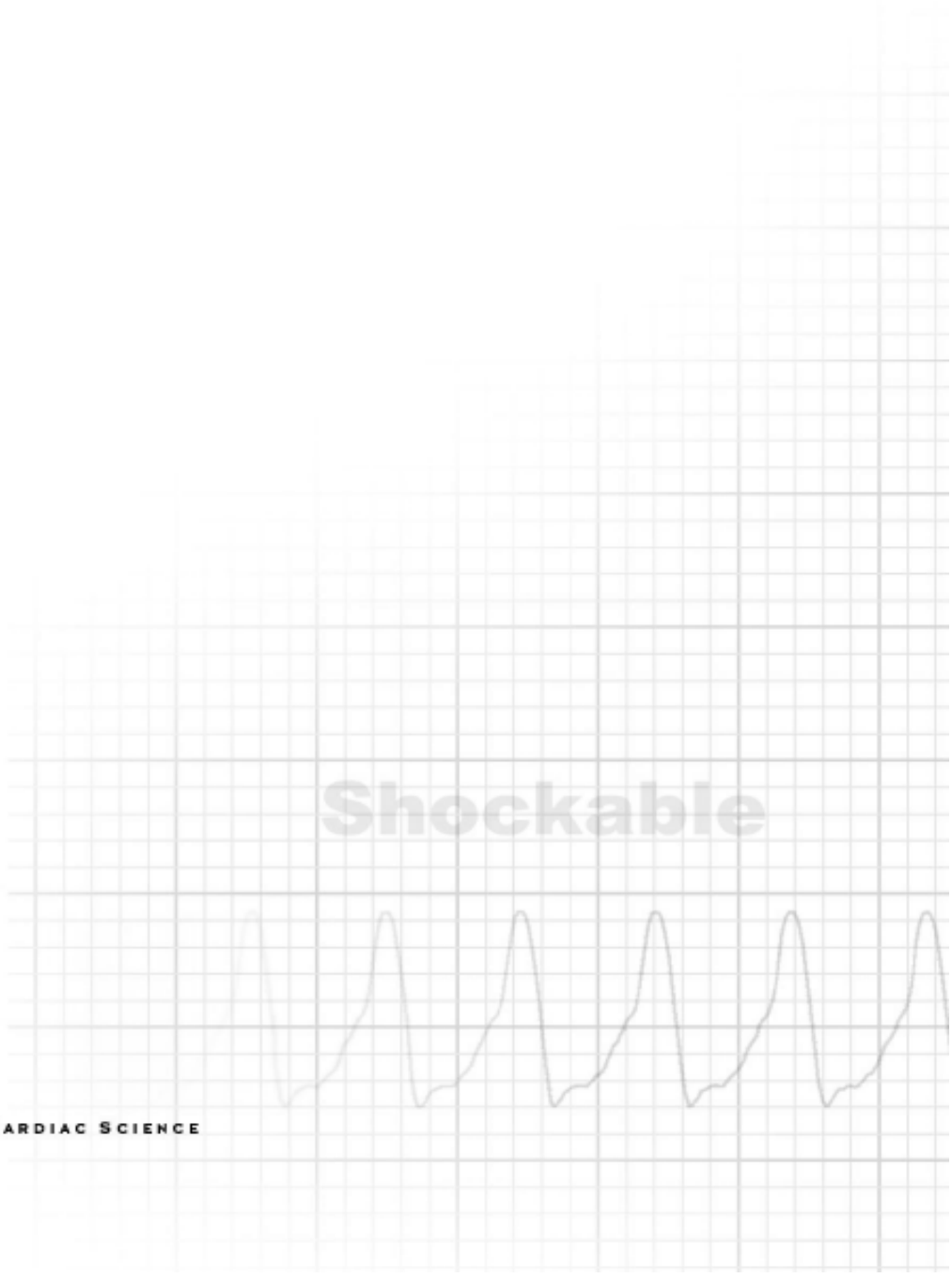

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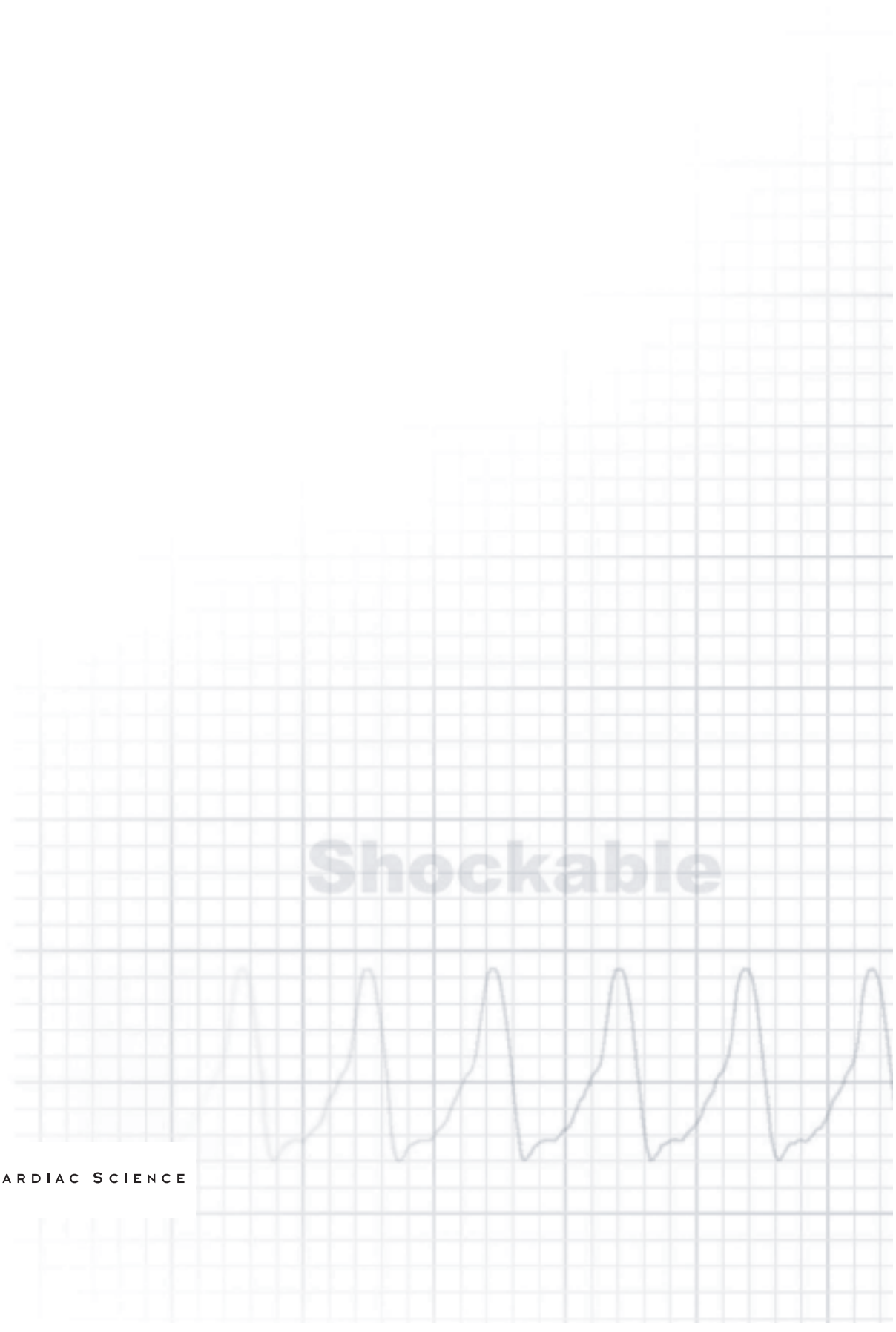

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